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CLAIMS

What is claimed is:

1. A method for reducing current drain in a communication device, the method comprising the steps of:
 - 10 detecting interference;
 - determining a frequency offset of the interference;
 - measuring a power level of the interference;
 - calculating a receiver linearity required to achieve a desired signal-to-interference ratio; and
 - 15 adjusting the receiver linearity calculated in the calculating step to achieve the desired signal-to-interference ratio.

5 2. A method as recited in claim 1, further comprising the step of operating the communication device in a code division multiple access (CDMA) system.

 3. A method as recited in claim 1, wherein the determining step includes
10 estimating a signal spectrum of the interference products to determine the frequency offset of interference products and whether interference products are present within a receiver passband.

 4. A method as recited in claim 1, wherein the determining step includes
15 estimating a signal spectrum of the interference products to determine the frequency offset of interference products and whether interference products exceed a noise spectrum threshold within a receiver passband.

 5. A method as recited in claim 1, wherein the measuring step includes an
20 attenuation factor of the receiver at the frequency offset.

 6. A method as recited in claim 1, wherein the adjusting step includes adjusting an analog-to-digital converter dynamic range to a level corresponding to the adjusted receiver linearity.

25 7. A method as recited in claim 1, wherein the measuring step includes measuring a transmit power level and frequency offset of the communication device, and wherein the desired signal-to-interference ratio of the calculating step is dependent upon the transmit power level and frequency offset.

30 8. A method as recited in claim 1, wherein the adjusting step include setting at least one of the group of current and gain to the receiver at a minimum level sufficient to achieve the desired signal-to-interference ratio.

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- 5 9. A method as recited in claim 1, wherein the adjusting step include setting at least one of the group of current and gain to the receiver at a minimum level sufficient to achieve the desired linearity and dynamic range for the desired signal-to-interference ratio.

5 10. A method for reducing current drain in a communication device, the method
comprising the steps of:
 detecting interferers outside of a receiver passband of the communication device;
 measuring a power level and frequency offset of the interferers;
 determining whether intermodulation products exceed a noise spectrum threshold
10 within the receiver passband, whereupon, if the intermodulation products
 exceed the threshold,
 calculating a receiver linearity required to achieve a desired signal-to-
 interference ratio; and
 adjusting the receiver linearity calculated in the calculating step to achieve
15 the desired signal-to-interference ratio.

5 11. A method as recited in claim 10, wherein the detecting and measuring steps includes estimating a signal spectrum of the interference products.

 12. A method as recited in claim 10, wherein the adjusting step includes adjusting a dynamic range of the receiver in accordance with the adjusted receiver linearity.

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 13. A method as recited in claim 10, wherein the calculating step includes calculating a third-order intercept point threshold to provide sufficient signal-to-interference, and wherein the adjusting step includes setting at least one of the group of current and gain to the receiver at a level sufficient to at least meet the third-order

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intercept point threshold.

5 14. A method for reducing current drain in a communication device, the method
comprising the steps of:
 detecting an interferer outside of a receiver passband of the communication
 device;
 measuring power levels and frequency offsets of the interferer and a transmitter of
10 the communication device;
 determining whether crossmodulation products exceed a noise spectrum threshold
 within the receiver passband, whereupon, if the crossmodulation products
 exceed the noise spectrum threshold,
 calculating a receiver linearity required to achieve a desired signal-to-
15 interference ratio; and
 adjusting the receiver linearity calculated in the calculating step to achieve
 the desired signal-to-interference ratio.

5 15. A method as recited in claim 14, wherein the detecting and measuring steps includes estimating a signal spectrum of the interference products of the interferer and transmitter.

10 16. A method as recited in claim 14, wherein the calculating step includes a normalization of the interference using an attenuation factor of the receiver at the frequency offset.

15 17. A method as recited in claim 14, wherein the adjusting step includes adjusting a dynamic range of the receive in accordance with the adjusted receiver linearity.

18. A method as recited in claim 14, wherein the calculating step includes calculating a third-order intercept point threshold to provide sufficient signal-to-interference, and wherein the adjusting step includes setting at least one of the group of current and gain to the receiver at a level sufficient to at least meet the third-order
20 intercept point threshold.

5 19. A communication device with reduced current drain, the communication
device comprising:
 a transmitter operable at a variable transmit power level;
 a receiver operable with variable linearity; and
 a control circuit coupled to the transmitter and receiver, the control circuit
10 operable to detect interference and control the receiver linearity, wherein if
 interference is detected the control circuit;
 determines a frequency offset of the interference;
 measures a power level of the interference;
 calculates a receiver linearity required to achieve a desired signal-to-
15 interference ratio; and
 adjusts the receiver linearity to achieve the desired signal-to-interference
 ratio.

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20. A communication device as recited in claim 19, wherein the control circuit estimates a signal spectrum of the interference products to determine whether interference products exceed a noise spectrum threshold within a receiver passband.

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21. A communication device as recited in claim 19, wherein the control circuit adjusts a dynamic range of the receiver in accordance with the adjusted receiver linearity.

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22. A communication device as recited in claim 19, wherein the control circuit adjusts at least one of the group of current and gain to the receiver at a minimum level sufficient to achieve the desired signal-to-interference ratio.

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23. A communication device as recited in claim 19, wherein the control circuit calculates a third-order intercept point threshold to provide sufficient signal-to-interference and sets at least one of the group of current and gain to the receiver at a level sufficient to at least meet the third-order intercept point threshold.